

CLAIMS

We claim:

1. A method for modifying a plant or plant part comprising the step of treating the plant or plant part with a composition that comprises modified lecithin in an amount sufficient to change the health, growth or life cycle of the plant or plant part.
2. The method of claim 1, wherein the modified lecithin is enzyme-modified lecithin.
3. The method of claim 2, wherein the enzyme-modified lecithin is derived from the group consisting of egg lecithin, soy lecithin, sunflower lecithin, peanut lecithin, sesame lecithin and canola lecithin.
4. The method of claim 3, wherein the enzyme-modified lecithin is derived from soy lecithin.
5. The method of claim 1, wherein the modified lecithin is acetylated lecithin.
6. The method of claim 1, wherein the modified lecithin is hydroxylated lecithin.
7. The method of claim 1, wherein the plant part is selected from the group consisting of fruits, leaves, flowers, roots, stems and tubers.
8. The method of claim 7, wherein the plant part is selected from fruits or tubers.
9. The method of claim 1, wherein the plant part is exposed to the composition before it is harvested from the plant.
10. The method of claim 1, wherein the plant part is exposed to the composition after it is harvested from the plant.

11. The method of claim 1, wherein treating the plant or plant part with the composition is achieved through a method selected from the group consisting of spraying the plant or plant part with the composition, and dipping the plant or plant part into the composition.

12. The method of claim 1, wherein the modified lecithin concentration in the composition is from about 1 ppm to about 20,000 ppm.

13. The method of claim 1, wherein the modified lecithin concentration in the composition is from about 10 ppm to about 10,000 ppm.

14. The method of claim 1, wherein the modified lecithin concentration in the composition is from about 25 ppm to about 5,000 ppm.

15. The method of claim 1, wherein the method is for improving the quality of a plant part that comprises the step of treating the plant part or the corresponding plant with a composition that comprises modified lecithin in an amount sufficient to improve the quality of the plant part.

16. The method of claim 15, wherein the quality of the plant part comprises at least one of the characters selected from the group consisting of turgidity, color, flavor and fruit cracking.

17. The method of claim 1, wherein the method is for retarding senescence in a plant part that comprises the step of treating the plant part or the corresponding plant with a composition that comprises modified lecithin in an amount sufficient to retard senescence in the plant part.

18. The method of claim 17, wherein senescence retardation is measured by storage or shelf life extension of the plant part.

19. The method of claim 1, wherein the method is for increasing the size, weight or both of a plant part that comprises the step of treating the plant part or corresponding plant

with a composition that comprises modified lecithin in an amount effective to increase the size, weight or both of the plant part.

20. The method of claim 1, wherein the method is for stimulating the growth of a plant or plant part that comprises the step of treating the plant or plant part with a composition that comprises modified lecithin in an amount sufficient to stimulate the growth of the plant or plant part.

21. The method of claim 20, wherein the composition is used to enhance root formation and development of roots on cuttings by treating the cuttings with the composition.

22. The method of claim 20, wherein the composition is used to enhance tuber formation by treating a tuber plant or tubers thereof with the composition.

23. The method of claim 20, wherein the composition is used to stimulate turf grass growth by treating turf grass with the composition.

24. The method of claim 1, wherein the method is for improving the aesthetic attributes of a plant or plant part that comprises the step of treating the plant or plant part with a composition that comprises modified lecithin in an amount effective to improve the aesthetic attributes of the plant or plant part.

25. The method of claim 1, wherein the method is for increasing fruit set on a plant that comprises the step of treating the plant or a suitable part thereof with a composition that comprises modified lecithin in an amount effective to increase fruit set on the plant.

26. The method of claim 1, wherein the method is for reducing fruit drop from a plant that comprises the step of treating the plant or a suitable part thereof with a composition that comprises modified lecithin in amount effective to reduce fruit drop.

27. The method of claim 26, wherein the fruit is apple.

28. The method of claim 1, wherein the method is for protecting a plant or plant part from a stress-related injury that comprises the step of treating the plant or plant part with a

composition that comprises modified lecithin in an amount effective to protect the plant or plant part from a stress-related injury.

29. The method of claim 28, wherein the plant or plant part is treated with the composition before it is exposed to a stress situation.

30. The method of claim 28, wherein the plant or plant part is treated with the composition while it is being exposed to a stress situation.

31. The method of claim 28, wherein the plant or plant part is treated with the composition after it is exposed to a stress situation.

32. The method of claim 28, wherein the composition further comprises at least one additive.

33. The method of claim 28, wherein the stress injury is the result of an abiotic stress.

34. The method of claim 33, wherein the abiotic stress is the result of chilling, freezing, wind, hail, flooding, drought, heat, soil compaction, soil crusting, agricultural chemical, or a combination of at least two of the foregoing.

35. The method of claim 34, wherein the agriculture chemical is a plant growth regulator, pesticide, insecticide, fungicide, herbicide or fertilizer.

36. The method of claim 28, wherein the stress injury is the result of a biotic stress.

37. The method of claim 36, wherein the biotic stress is caused by a pathogen, an insect, a nematode, a snail, mites, weeds, or a physical damage caused by human and non-human animals.

38. The method of claim 37, wherein the pathogen is a fungus, bacteria or virus.

39. A method for eliciting the hypersensitive response in a plant or plant part, the method comprising the step of treating the plant or plant part with a composition that comprises modified lecithin in an amount effective to increase the total activity of an enzyme selected from the group consisting of phenylalanine ammonia lyase, polyphenol oxidase, and peroxidase.

40. A method for increasing the total activity of an enzyme in a plant or plant part wherein the enzyme is selected from the group consisting of phenylalanine ammonia lyase, polyphenol oxidase, peroxidase, and indole-3-acetic acid oxidase, the method comprising the step of treating the plant or plant part with a composition that comprises modified lecithin in an amount effective to increase the total activity of the enzyme.

41. A method for increasing lignin synthesis in a plant or plant part, the method comprising the step of treating the plant or plant part with a composition that comprises modified lecithin in an amount effective to increase lignin synthesis in the plant or plant part.